UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105
October 12, 2007

Mr. Ron Kosinski
California Department of Transportation
100 South Main Street
Los Angeles, California 90012-3606

Subject: Draft Environmental Impact Statement (FEIS) for the Schuyler Heim Bridge Replacement and State Route 47 Expressway Project (CEQ # 20070361)

Dear Mr. Kosinski:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Schuyler Heim Bridge Replacement and State Route (SR) 47 Expressway Project (Project), Ports of Los Angeles and Long Beach, Los Angeles County, California. Our comments are provided under the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementing Regulations (40 CFR 1500-1508), and Section 309 of the Clean Air Act. Based upon our review, we have rated the proposed action as *Environmental Concerns- Insufficient Information (EC-2*). See attached "Summary of the EPA Rating System" for a description of the rating. The basis for the rating is summarized below and further detailed in our enclosed comments.

Cumulative Impacts

EPA is aware of a number of forthcoming EISs in the port area over the next few years, which, if implemented, will lead to substantial cumulative environmental impacts in an already highly impacted area. We note that the neighboring low income and minority communities have historically sustained extensive impacts to air quality and water quality from goods movement-related operations. For this reason, it is critical that the environmental documentation for this project, and all future projects in the Port of Los Angeles and Port of Long Beach area, reflect the level of historical, current, and future direct, indirect, and cumulative environmental impacts. In particular, this project's contributions to cumulative effects must be clearly defined along with proposed mitigation. EPA recommends that the FEIS include a more robust cumulative impact assessment that effectively discloses the health of the current environment, the trends that have contributed to impacts and/or losses to these resources, and the Project's cumulative effects.

Air Quality

EPA has concerns with the Project's impacts to air quality, including mobile source air toxics (MSATs). EPA recommends, given the likelihood of a shift in localized MSAT impacts in an area that is already highly impacted by air toxics, that Caltrans perform dispersion modeling for major MSATs to identify areas that may experience an increase in MSATs. Caltrans should provide additional mitigation for any adverse MSATs impacts and commit to these mitigation measures in the FEIS and Record of Decision (ROD). The mitigation plan developed for the

Project should 1) further minimize impacts from construction; 2) be consistent with the Clean Air Action Plan (CAAP, approved on November 20, 2006); and 3) identify specifically how measures identified in the CAAP can be both expanded upon and implemented earlier. EPA also recommends that the FEIS include additional monitoring data and studies performed in the project area and identify exceedances of the new 24-hour national ambient air quality standard for particulate matter less than 2.5 microns in diameter (PM2.5).

Environmental Justice

EPA is concerned that the project may result in disproportionately high and adverse air quality impacts to low income and minority populations. EPA recommends that Caltrans re-assess these potential impacts as detailed in the enclosed comments. Mitigation should be proposed, as necessary, to reduce any identified environmental justice impacts.

Water Quality

EPA is concerned that proposed construction work in the Cerritos Channel and Consolidated Slip/Dominguez Channel will resuspend fine-grained bottom sediments and may exceed state water quality standards and the proposed silt/turbidity curtains may not be fully effective to reduce impacts from resuspended sediments, given tidal influences and the depth of the channel. Also, the DEIS does not accurately characterize the current conditions in the area surrounding the bridge. EPA recommends including recent testing results from complete Tier 1 and Tier 2 sediment sampling in the area surrounding the bridge in the Cerritos Channel and implementing additional best management practices (BMPs) and a construction monitoring program to ensure containment of resuspended sediments.

The enclosed Detailed Comments include additional recommendations to coordinate with EPA's Superfund Program for work proposed in Consolidated Slip and with the U.S. Fish and Wildlife Service and the California Department of Fish and Game to address impacts to the American peregrine falcon nesting pair on the Schuyler Heim Bridge.

We appreciate the opportunity to review this DEIS and are available to further discuss all recommendations provided. When the FEIS is released for public review, please send two hard copies and three electronic copies to the address above (Mail Code: CED-2). If you have any questions, please contact me at 415-972-3846 or Susan Sturges, the lead reviewer for this project. Susan can be reached at 415-947-4188 or sturges.susan@epa.gov.

Sincerely,

/s/ Connell Dunning for

Nova Blazej, Manager
Environmental Review Office

Enclosures:
EPA's Detailed Comments
Summary of EPA Rating Definitions

cc: Karl Price, California Department of Transportation
Steve Healow, Federal Highway Administration
Mark Cohen, U.S. Army Corps of Engineers

Cumulative Impacts

The cumulative impacts section of the Draft Environmental Impact Statement (DEIS) for the Schuyler Heim Bridge Replacement and State Route 47 Expressway Project (Project) in the Ports of Los Angeles and Long Beach identifies multiple current and future projects to be constructed in the ports area. A second document, the recently completed DEIS for the TRAPAC terminal also identifies multiple capacity increasing and infrastructure projects. Based on information contained in both documents, an estimated 14 combined Environmental Impact Report (EIR)/EISs, and almost twice as many EIRs, are to be developed in support of infrastructure projects over the next few years. This large volume of future proposed projects in the ports, if implemented, will lead to substantial cumulative construction- and operation-related environmental impacts in an already highly impacted area. We note that the neighboring low income and minority communities have historically sustained extensive impacts to air quality and water quality from goods movement-related operations.

The high volume of proposed projects combined with a highly urbanized setting, with low-income and minority communities in an already highly impacted area, demands a thorough cumulative impacts assessment with extensive proposed mitigation. Specifically, all feasible mitigation should be proposed and committed to along with timeframes for implementation.

The DEIS includes a brief qualitative discussion of cumulative impacts for each resource area, but does not provide an appropriate context for cumulative impacts. The DEIS does not include the historical extent of resource losses and impacts and instead, relies on baseline conditions described in the Affected Environment sections of the document for the analysis.

Given the historically sustained extensive cumulative impacts to air and water quality from goods movement-related operations, EPA strongly recommends a more comprehensive analysis of cumulative impacts to resources of concern. The Final EIS (FEIS) should include a more robust cumulative impact assessment that effectively discloses: 1) a defined study area for each resource; 2) the health or status of the resource and the historical extent of losses and/or impacts to the resource; 3) the trends associated with those losses and/or impacts; 4) how reasonably foreseeable actions may impact those resources; 5) the Project's contributions to these cumulative effects; and 6) a mitigation strategy and timeframe of implementation to reduce impacts.

*Recommendation**:***

- Include a more robust cumulative impact analysis in the FEIS. EPA recommends Caltrans follow the June 2005 *Guidance for Preparers of Cumulative Impact Analysis* prepared jointly by Caltrans, Federal Highway Administration, and the EPA for this additional analysis. The guidance is a useful reference and is available on-line at http://www.dot.ca.gov/ser/cumulative_guidance/approach.htm
- Include a mitigation strategy to reduce impacts from the proposed project and include timeframes for implementation of all proposed mitigation.

Air Quality

Mobile Source Air Toxics

The project area includes the Wilmington District of the City of Los Angeles, which is already one of the most heavily impacted areas for air quality in the nation. In addition to being adjacent to the Ports of Los Angeles and Long Beach (where marine vessels, cargo handling equipment, diesel trucks, and locomotives all contribute mobile source air toxics (MSAT) emissions), Wilmington is also the location of several oil refineries and other major air toxics emitters.

A 2001-2003 California Air Resources Board monitoring study (http://www.arb.ca.gov/ch/reports/wilmington_sb25_report.pdf) adjacent to Wilmington Park Elementary School (1115 Mahar Avenue, Wilmington, CA), approximately 1000 feet from the proposed Project area where Henry Ford Avenue meets Alameda Street, found high levels for several air toxics. Predicted increased cancer risks due to air toxics at the site were 277 in a million, which is much higher than the level EPA generally considers unacceptable (EPA uses >100 in a million risk as unacceptable for stationary sources; see the Benzene NESHAP, 54 FR 38044, September 14, 1989). The majority of the increased cancer risk was due to 1,3-butadiene and benzene, both primarily emitted by mobile sources. The 277 in a million risk was from only nine air toxics. Including the impacts of diesel particular matter (PM) would make the actual risks much higher.

Given the significant concerns about adverse health effects from mobile source pollutants and the project's potential for emissions in close proximity to residential communities and sensitive receptors, EPA recommends performing an analysis of potential MSAT impacts that informs decision-making between project alternatives and informs avoidance, minimization, and mitigation options. When considering appropriate and useful levels of analysis, EPA recommends that the lead agency consider the following:

- The likelihood of impact and potential magnitude of the effect, including both the magnitude of emissions and the proximity of the project emissions to potential residential and sensitive receptors, such as schools, hospitals, day care facilities, and nursing homes;
- The severity of existing conditions;
- Whether the project is controversial and whether air toxics concerns have been raised by the public for this project or for other projects in the area in the past;
- Whether there is a precedent for analysis for projects of this type, either under NEPA or other environmental laws; and
- Whether the analysis could be useful for distinguishing between alternatives, informing design changes, and targeting mitigation.

For most transportation projects, EPA generally recommends that the following levels of analysis be considered (in order of increasing complexity):

1. Qualitative discussion,
2. Quantify emissions,
3. Toxicity-weight emissions,

4. Dispersion modeling, and
5. Risk assessment.

These analyses are further described in the March 2007 report entitled "Analyzing, Documenting, and Communicating the Impacts of Mobile Source Air Toxic Emissions in the NEPA Process" conducted for the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on the Environment and funded by the Transportation Research Board (http://www.trb.org/NotesDocs/25-25(18)_FR.pdf). Procedures for toxicity-weighting, which EPA has found to be especially useful for the targeting of mitigation, are described in EPA's Air Toxics Risk Assessment Reference Library (Volume 3, Appendix B, beginning on page B-4, http://epa.gov/ttn/fera/data/risk/vol_3/Appendix_B_April_2006.pdf).

The DEIS acknowledges the need for quantitative MSAT analysis, stating (page 3.13-20):

"(1) the project would serve diesel trucks with the potential to concentrate diesel particulate matter; and
(2) sensitive receptors are within the project area and near the project site."

EPA agrees that a quantitative MSAT analysis is appropriate in this situation. The Project may result in shifting or exacerbating MSAT impacts in an area that is already heavily impacted, causing a concern with both direct and cumulative impacts. While the DEIS acknowledges the need for quantitative MSAT analysis, the analysis presented is inadequate to fully understand how MSAT impacts may vary between project alternatives. The regional emissions analysis, presented in Table 3.13-9, does not have sufficient information to describe how MSAT impacts will change, given that MSAT impacts are usually very localized (i.e. "hotspot").

Monitoring studies and epidemiological research have found that the largest impacts from vehicle-related pollutants generally occur within the first 1000 feet of a major roadway (see Section 3 of EPA's "Regulatory Impact Analysis: Control of Hazardous Air Pollutants from Mobile Sources," February 2007, http://www.epa.gov/otaq/regs/toxics/fr-ria-sections.htm). The DEIS acknowledges that there are a number of sensitive receptors, including residences and schools, that are closer than 1000 feet, some even within 100 feet of the proposed Project location. Thus, any change in traffic density resulting from the proposed Project alternatives (for example, the shifting of truck traffic from State Route 103 (SR-103) or Interstate 710 (I-710) to State Route 47 (SR-47)/Alameda Street) is likely to lead to both an increase in MSAT impacts at one location and a decrease in MSAT impacts at another location. The net result of this change may be either unacceptable or beneficial, and is especially dependent on the relative locations of sensitive receptors, but is difficult to determine without further quantitative analysis of changes in ambient concentration as a result of each alternative.

Recommendations:

- Given the likelihood of a shift in localized MSAT impacts in an area that is already highly impacted by air toxics, EPA recommends that Caltrans perform dispersion modeling of each of the MSATs listed in Table 3.13-9 for inclusion in the FEIS. Maps of ambient concentration should be presented in the FEIS for both the base year (2003, no build) and fully-operational facility (all alternatives). If construction emissions are not fully mitigated, the predicted changes in ambient concentration that would result from construction activity should be presented as well.

- The FEIS should discuss areas where alternatives may lead to increased MSAT impacts or provide environmental benefits. For example:
    - Would changes to SR-47 lead to increased impacts near Henry Ford Avenue and Alameda Street? For alternatives that may lead to increased MSAT impacts, the MSAT analysis will be critical for distinguishing between build alternatives, identifying whether specific design changes or mitigation would be necessary or beneficial, and targeting mitigation efforts.
    - Would the proposed SR-103 Extension result in decreases in truck traffic along Willow Street to I-710, providing an environmental benefit for this heavily-residential area?

- If the project will result in increased MSAT impacts, then Caltrans should propose MSAT mitigation measures. In order to be most helpful for targeting mitigation, the emissions should be further reported by project segment and smaller geographic locations. The benefits of proposed MSAT mitigation measures should be quantified and discussed in terms of the ability of mitigation to minimize or eliminate any potentially adverse localized impacts.

National Ambient Air Quality Standards

The Project is located in the South Coast Air Basin (SCAB). The SCAB is classified by EPA as serious nonattainment of the National Ambient Air Quality Standards (NAAQS) for particulate matter less than ten microns in diameter (PM10), nonattainment for particulate matter less than 2.5 microns in diameter (PM2.5), severe nonattainment for 8-hour ozone, and maintenance for CO. The SCAB has the worst 8-hour ozone and $PM_{2.5}$ problems in the nation, and attainment of these National Ambient Air Quality Standards (NAAQS) will require massive reductions from mobile sources, given the rapid growth in this emissions category and the long lifespan of diesel engines. The DEIS accurately reflects the SCAB nonattainment designations made by EPA for the NAAQS.

San Pedro Bay Ports Clean Air Action Plan

The San Pedro Bay Ports Clean Air Action Plan (CAAP), approved on November 20, 2006, identifies the measures that the Port of Los Angeles and the Port of Long Beach will take to reduce the emissions from Port operations. The CAAP includes recommendations and measures to reduce emissions 45% by 2011 through control measures for ocean-going vessels, heavy duty vehicles, cargo-handling equipment, harbor craft, and locomotives. The measures included are anticipated to reduce diesel particulate matter by 80% over the next five years (p. 4-39). Construction equipment and heavy duty truck emissions are expected to be a substantial

portion of the emissions associated with the proposed project. EPA recommends that any mitigation for the project's emissions impacts be consistent and support the CAAP.

Traffic and Air Quality Technical Studies

The Air Quality section references the Traffic and Air Quality technical studies but does not include these studies in the DEIS. These studies contain considerable technical information that augments the conclusions of the DEIS.

Recommendation:

Include the Traffic and Air Quality technical studies as attachments to the FEIS.

Conformity

The description of the applicable conformity requirements in several different sections of the DEIS provide conflicting conclusions as to which conformity requirements apply to the various aspects of the proposed project. Federal Actions that require Federal Highway Administration (FHWA) funding or approval are subject to the Transportation Conformity requirements [40 CFR part 93, subpart A]; other Federal Actions are subject to the General Conformity requirements [40 CFR part 93, subpart B]. Further, if the proposed project involves bridge retrofit, modification, or replacement and requires a permit from any Federal Agency other than FHWA, General Conformity would apply to the construction (i.e., equipment, barge, tugboat, etc.) emissions and operational emissions associated with the modifications to the Schuyler Heim Bridge.

Recommendation:

Clarify in the FEIS which aspects of the project are subject to transportation conformity, and which to general conformity. For General Conformity, the FEIS should describe the specific Federal Action that triggers the General Conformity requirements and include an analysis of the direct and indirect emissions associated with that Federal Action that are subject to the General Conformity requirements. For the General Conformity applicability analysis shown in Table 3.13-4, in addition to the column labeled "10% of the Emission Inventory", EPA also recommends specifically listing the emissions of each pollutant for which General Conformity is applicable and for which year this analysis is performed.

The DEIS states that the originally proposed project was included in the SCAG 2004 Regional Transportation Plan (RTP) and the SCAG 2006 Regional Transportation Improvement Program (RTIP) (pp. 3.13-11 – 3.13-12) and that the changes to the project scope are expected to be approved into the 2008 RTP in March 2008.

Recommendation:

To demonstrate that the proposed project meets the transportation conformity requirements in 93.115(a) and 93.115(b)(1), clarify in the FEIS that the project's design and scope have not changed significantly from those which were included in the 2004 RTP and 2006 TIP.

PM Hot Spot Analysis

A PM2.5 hot spot analysis is only required for the portion of the project that will be funded or approved by FHWA. However, the PM2.5 hot spot analysis in the DEIS also includes marine vessel emissions (pp. 3.13-17) that are elsewhere described as covered under general conformity (pp. 3.13-5).

Recommendation:
Clarify in the FEIS the relevant requirements for the emissions associated with the various elements of the project, and specify which emissions should be included in the PM2.5 hot spot analysis.

The PM2.5 and PM10 hot spot analyses are based upon three years of monitoring data (2004-2006) at the North Long Beach monitoring site. However, short-term ambient air quality trends may be influenced by variations in meteorology and not accurately reflect the longer-term ambient air quality trends.

Recommendation:
Base the conclusions of the hot spot analyses for PM10 and PM2.5 on six years of ambient air quality data, rather than three years, so that conclusions about ambient air quality trends is not based upon potential impacts of short-term meteorological trends.

The monitoring data presented in the PM hot spot analysis is from the North Long Beach site, the closest monitoring site to the project location. However, the traffic at the North Long Beach monitoring site may not reflect the same traffic conditions as at the project location since the project's area is heavily impacted by heavy duty truck traffic.

Recommendation:
If possible, include a discussion in the PM hot spot analyses of PM trends at monitors in locations with the percentage of truck traffic similar to that of the project area. This analysis would determine if PM concentrations are higher at these locations, exhibit different trends, or whether those concentrations are significantly influenced by roadway emissions.

PM10

A 2001-2003 CARB monitoring study (http://www.arb.ca.gov/ch/reports/wilmington_sb25_report.pdf) adjacent to the Wilmington Park Elementary School, approximately 1000 feet from the proposed Project area, found that PM10 levels were higher at the CARB study's Wilmington monitoring site than at the North Long Beach monitoring site. These results suggest that the air quality near the Wilmington School may be influenced by local sources not captured at the North Long Beach site.

Recommendation:
In addition to the air quality analysis presented in the DEIS, include results of the CARB study in the FEIS. Revise the air quality section to take into account the CARB study's conclusions about the air quality in the vicinity of the proposed project. If necessary, re-evaluate the DEIS' conclusions regarding the proposed project's impact on the local air quality conditions.

PM2.5

In the discussion of the air quality at the North Long Beach monitoring site (page 3.13-7), the DEIS references the number of exceedances of the 65 micrograms per cubic meter (ug/m^3) 24-hour PM2.5 NAAQS in recent years, but does not describe exceedances of the new 24-hour PM2.5 NAAQS of 35 ug/m^3. The new standard should be used as the threshold for NEPA evaluation purposes, as described in the memorandum by Anne Norton Miller, Director, EPA Office of Federal Affairs ("Reflecting the Revised PM2.5 National Ambient Air Quality Standard in NEPA Evaluations", June 25, 2007). This new standard was exceeded numerous times at the North Long Beach and Long Beach stations, as shown in the chart below. As demonstrated in this chart, the two Long Beach monitoring locations do show overall progress, but the PM2.5 35 ug/m^3 24-hour standard has not been attained at either monitoring location.

Number of PM2.5 35 ug/m^3 24-hour exceedances per year:

	2000	2001	2002	2003	2004	2005	2006
North Long Beach:	35	47	36	25	21	13	5
Long Beach:				15	17	10	7

Recommendation:

To most accurately represent the air quality conditions in the Long Beach area, include in the FEIS an updated discussion of the PM2.5 air quality conditions at the nearby monitoring stations and compare the PM2.5 concentrations to the new PM2.5 24-hour NAAQS.

Monitoring Studies near the San Pedro Bay Ports

SCAQMD has an ongoing ambient monitoring project in the vicinity of the Ports of Los Angeles and Long Beach. The study will measure criteria pollutants, air toxics and PM with speciation. In addition, SCAQMD currently is analyzing data from the MATES-III monitoring program which will soon provide air toxics monitoring data, including PM2.5 speciation at monitoring locations closer to the Ports.

Recommendation:

Where relevant, include in the FEIS the results of these two micro-scale monitoring studies to determine whether any updates to the air quality discussion in the DEIS are necessary in order to provide the most accurate and current assessment of the air quality conditions in the proposed project area.

Construction Emissions and Mitigation:

The project construction is expected to result in significant emissions of CO, NOx, ROG, PM10, and PM2.5, such as demonstrated in Table 13.10 for Alternative 1. In addition, emissions from diesel-powered equipment are expected. The MATES-II study in South Coast found that 70% of all cancer risk is attributed to diesel particulate emissions. The DEIS should evaluate the specific potential for increased diesel emissions, separate from other mobile-source emissions. EPA recommends consideration of the following additional mitigation measures to reduce the impacts resulting from future construction associated with this project.

Recommendations:
Due to the serious nature of the PM_{10} and $PM_{2.5}$ conditions in the SCAB and the significant cancer risk attributed to diesel emissions in the South Coast, EPA recommends that the best available control measures (BACM) for these pollutants be implemented at all times and that the FEIS and ROD incorporate the Construction Mitigation Plan. We recommend that (1) all applicable requirements under SCAQMD Rules, (2) the Caltrans Standard Construction Specifications and recommended measures listed on pages 3.13-36 and 3.13-37 of the DEIS, and (3) the following additional and/or revised measures be incorporated into a Construction Mitigation Plan.

Fugitive Dust Source Controls:

- Stabilize open storage piles and disturbed areas by covering and/or applying water or chemical/organic dust palliative where appropriate. This applies to both inactive and active sites, during workdays, weekends, holidays, and windy conditions.
- Install wind fencing and phase grading operations where appropriate, and operate water trucks for stabilization of surfaces under windy conditions.
- When hauling material and operating non-earthmoving equipment, prevent spillage and limit speeds to 15 miles per hour (mph). Limit speed of earth-moving equipment to 10 mph.

Mobile and Stationary Source Controls:

- Maintain and tune engines per manufacturer's specifications to perform at EPA certification levels and to perform at verified standards applicable to retrofit technologies. Employ periodic, unscheduled inspections to limit unnecessary idling and to ensure that construction equipment is properly maintained, tuned, and modified consistent with established specifications.
- Prohibit any tampering with engines and require continuing adherence to manufacturers recommendations
- If practicable, lease newer and cleaner equipment meeting the most stringent of applicable Federal or State Standards (see table: http://arb.ca.gov/msprog/ordiesel/documents/Off-Road%20Diesel%20Stds.xls). In general, only Tier 2 or newer engines should be employed in the construction phase, given the scale of the construction project, the level of the exposed population, and the high background levels of pollutants in the area.
- Utilize EPA-registered particulate traps and other appropriate controls where suitable to reduce emissions of diesel particulate matter and other pollutants at the construction site.

Administrative controls:

- Identify all commitments to reduce construction emissions and update the air quality analysis to reflect additional air quality improvements that would result from adopting specific air quality measures.

- Identify where implementation of mitigation measures is rejected based on economic infeasibility.
- Prepare an inventory of all equipment prior to construction and identify the suitability of add-on emission controls for each piece of equipment before groundbreaking. (Suitability of control devices is based on: whether there is reduced normal availability of the construction equipment due to increased downtime and/or power output, whether there may be significant damage caused to the construction equipment engine, or whether there may be a significant risk to nearby workers or the public.)
- Utilize cleanest available fuel engines in construction equipment and identify opportunities for electrification. Use low sulfur fuel (diesel with 15 parts per million or less) in engines where alternative fuels such as biodiesel and natural gas are not possible.
- Develop a construction traffic and parking management plan that minimizes traffic interference and maintain traffic flow.
- Identify sensitive receptors in the project area, such as children, elderly, and infirm, and specify the means by which you will minimize impacts to these populations. For example, locate construction equipment and staging zones away from sensitive receptors away from fresh air intakes to buildings and air conditioners.
- Reflect the SCAQMD's BACMs for fugitive dust mitigation listed in Tables 3-13.11 – 3-13.13 in the Mitigation Reporting Plan (i.e., should be enumerated as mitigation measures in the monitoring report on p. 264 and 265). Moreover, given the severity of the PM problem in the area and the size of the construction activity associated with the proposed project, commit to implement during all construction phases more than the minimum of one BACM in each category in order to reduce PM emissions to the minimum.

Environmental Justice

EPA is concerned that the project may result in disproportionately high and adverse air quality impacts to low income and minority populations. Executive Order 12898 addresses environmental justice in minority and low income populations, and the CEQ has developed guidance concerning how to address Environmental Justice in the environmental review process (http://ceq.eh.doe.gov/nepa/regs/ej/justice.pdf). The project area is characterized by substantial proportions of both minority and low-income persons (82 percent minority and as many as 77 percent of persons below the poverty threshold in some areas), which is much greater that in either the City or County of Los Angeles.

As analyzed in the DEIS, the reference population is too narrowly defined and is not appropriated used for comparison to the affected population. The DEIS bases its determination of no disproportionately high and adverse air quality impacts to low income and minority populations, in part, because the DEIS indicates the effects of this project are not markedly different in severity or magnitude compared to other past or present highway improvements projects in the region (page 3.3-30). The DEIS further indicates that even though low-income

and minority groups would bear a large part of the burden associated with the project, it is due only to their proximity to short-term construction activities and is the same as for any community that would be similarly affected by proximity to construction (page 3.3-31). These arguments do not take into consideration the already existing ambient concentrations of air emissions and resulting increased cancer risk on minority and low-income populations in neighboring communities or other degraded environmental conditions associated with proximity to major port and industrial facilities. EPA recommends that Caltrans re-assess these potential impacts by more broadly defining the reference community (comparison group) to include the population that will benefit from the proposed project and comparing the benefits and impacts borne by both the affected community and the reference community.

Recommendations:

- Define the potential environmental justice concerns in the FEIS, which is the first step in an environmental justice analysis. Include a discussion of any environmental justice issues raised during the scoping meetings. If there are any additional environmental justice issues identified, then add them to Section 3.3.3.3.3.2 *Adverse Effects to Overall Population.* This section might be more appropriately named *Potential Environmental Justice Issues.*
- Define the reference community, which, combined with defining the affected community, is an important step in the environmental justice analysis. This is a critical step since the definitions are used to analyze whether there are disproportionately high and adverse human health or environmental impacts by comparing the impacts to the affected population with the impacts to the reference community. The affected community is defined in Section 3.3.3.2 *Affected Environment.* The reference community (or comparison group) is generally defined as the population that will benefit from the proposed project.
- Add a discussion of MSAT impacts, discuss the likelihood of a shift in localized MSAT impacts, and identify populations affected by MSATs, in Section 3.3.3.3.3.2 *Adverse Effects to Overall Population, Air Quality.*
- Revise Section 3.3.3.3.3.3 *Disproportionately High and Adverse Impacts to Minority and Low-income Populations* to include a discussion of the impacts to the affected community as compared to the reference community. The impacts that are significant after mitigation, such as the air quality impacts due to temporary construction and air quality impacts due to diversion of marine vessels around Terminal Island, are impacts that are predominately borne by minority and low-income populations and should be identified as environmental justice impacts in Section 3.3.3.4 *Environmental Justice Determination.*
- Identify additional mitigation to address these environmental justice impacts.

Water Quality

As noted in Table S-1: *Potential Project Effects and Avoidance, Minimization and/or Mitigation Measures*, Alternatives 1, 1A, 2, 3 and 4 would all involve the resuspension of fine-grained bottom sediments during 1) replacement and demolition of the Schuyler Heim Bridge in the Cerritos Channel, 2) placement of bridge footings in the Consolidated Slip/Dominguez Channel, and 3) other construction activities. The harbor sediments in the area of the bridges are

primarily silt and finer-sized fractions and, if resuspended, are expected to stay in suspension for days, resulting in exceedances of state water quality standards.

Dominguez Channel/Consolidated Slip

The DEIS incorporates sampling data from 2002 to characterize the sediments contained in the area around Consolidated Slip. The sediments in Consolidated Slip are highly contaminated with heavy metals including copper, lead, zinc, and mercury, total DDT compounds, total PCB compounds, and total PBC compounds. Consolidated Slip is part of Operable Unit 2 (OU2) of the Montrose Superfund Site. Montrose manufactured DDT at their plant upstream in Torrance from 1947 to 1982. DDT contaminated waste water flowed from the Montrose plant through subsurface storm drains and open channels, passing through the Dominguez Channel and Consolidated Slip on its way to the ocean. Consolidated Slip is currently listed on EPA's 303(d) list for 10 pollutants (including DDT) and has been designated by the Los Angeles Regional Water Quality Control Board (LARWQCB) as a Toxic Hot Spot under the Bay Protection and Toxic Cleanup Program.

Recommendation:

- Because OU2 is part of a Superfund Site, which is currently under remedial investigation, any activities that could potentially disturb sediments within the Site must be coordinated and approved through the EPA Superfund program process. DDT contaminated sediment in the Consolidated Slip would need to be managed as state and federal listed hazardous waste.

- EPA recommends that sediment sampling be conducted prior to any physical disturbance of sediment in Consolidated Slip to determine whether DDT is present in sediments in the work area. Please contact Richard Hiett, Remedial Project Manager, of our Superfund Program at 415-972-3170 for project coordination with the Superfund Site.

Cerritos Channel

The supplemental report, *Final State Route 47 Expressway and Schuyler Bridge Replacement Project Water Quality Impacts Technical Study* (July 2007*)* (Technical Study) relies on two sources of data to characterize the sediments in the Cerritos Channel underneath the Schuyler Heim Bridge. Surface sediment was characterized by looking at samples of the top 6 inches from a study performed in 2002 by CH2M Hill, and deeper strata were characterized from a 1994 Los Angeles Harbor Department Study. Because of the high rate of sedimentation in this area (the Ports of Los Angeles and Long Beach routinely conduct maintenance dredging in the area to maintain channel depth), the DEIS may not accurately characterize the current conditions in the area surrounding the bridge.

Recommendation:

The FEIS should include recent testing results from a complete Tier 1 and 2 sediment sampling, in accordance with the procedures set forth in EPA's Inland Testing Manual (http://www.epa.gov/waterscience/itm/ITM/) in the area surrounding the Schuyler Heim Bridge in the Cerritos Channel. Testing should fully characterize the chemical and physical properties of the sediment to the proposed project depth.

Construction Effects – Silt/Turbidity Curtains

As stated in the DEIS, sediment contaminants have the ability to impact aquatic life in both the Cerritos Channel and Dominguez Channel. The construction of new bridge footings and the removal of the old foundation will resuspend channel bottom sediments creating a turbidity plume that can be expected to stay in suspension for days and travel as far 1,250 meters upstream before the tide turns. As stated in the Technical Study, the sediment plume may contain constituents (copper, zinc, and PAHs) at potentially toxic concentrations. These concentrations will exceed State of California water quality criteria (WQC) and may cause acute toxicity to aquatic organisms. Additional contamination is possible from removal of lead-based paint from the existing structures. The DEIS proposes to utilize cofferdams and turbidity curtains to mitigate sediment resuspension (Section 3.16.4.1.1.1).

The loss of contaminants to the surrounding waters is of particular concern when dredging or relocating contaminated sediments. The sediment grain size distribution within the Consolidated Slip indicates that 80.12% of the material is composed of fines (silt and clays). Sediment samples taken from the Cerritos Channel also indicate a significant percentage (greater than 80 percent) of coarse silt and fines. This is of concern because sediment contaminants are generally bound to the fine particles, which are most easily resuspended during construction activities.

While the U.S. Army Corps of Engineers and other Federal Agencies have designated the use of silt or turbidity curtains a Best Management Practice to help protect environmental resources, there is little published literature that demonstrates how effective silt curtains have been in meeting project objectives.[1] The effectiveness of silt curtains depends on many factors such as 1) nature of operation, 2) quantity and type of material in suspension within or upstream of the curtain, and 3) characteristics, construction, and condition of the curtain as well as the area and configuration of the barrier enclosure (e.g. partial or full depth containment, either solid or permeable).

A 1978 study on silt curtains, performed by JBF Scientific Corporation for the U.S. Army Corps of Engineers Dredged Material Research Program, concluded that high currents and energy environments cause curtains to flare, thus reducing the curtain's effective depth. The study also noted that tidal currents that dominate the hydrodynamic regime may cause the fluid mud to be resuspended, especially if the curtain is not properly deployed and stated that "with respect to overall effectiveness and deployment considerations, a current velocity of approximately 1 knot appears to be a practical limiting condition for silt curtains."[2]

These conclusions are further supported by a 1994 EPA report which states that, "As a generalization, silt curtains and screens are most effective in relatively shallow, quiescent water. As the water depth increases and turbulence caused by currents and waves increases, it becomes increasingly difficult to effectively isolate the dredging operation from the ambient water. The

[1] Francingues, N. R., and Palermo, M. R. (2005). "Silt curtains as a dredging project management practice," *DOER Technical Notes Collection* (ERDC TN-DOER-E21). U.S. Army Engineer Research and Development Center, Vicksburg, MS. http://el.erdc.usace.army.mil/dots/doer/doer.html.

[2] JBF Scientific Corporation. (1978). "An analysis of the functional capabilities and performance of silt curtains," Technical Report D-78-39, US Army Engineer Waterways Experiment Station, Vicksburg, MS.

St. Lawrence Center (1993) advises against the use of silt curtains in water deeper than 6.5 meters or in currents greater than 50 centimeters/second."[3]

Recommendation:

- Provide more information in the FEIS about the measures (including silt/turbidity curtains) that will be implemented during construction to minimize sediment resuspension. This should include information regarding the length, depth, and placement of curtains that will be utilized in both the Cerritos Channel and near Consolidated Slip. Given the tidal influences, and depth of channel (>50 feet), there is a high likelihood for failure. Please clarify in the FEIS whether the curtains in the Cerritos Channel will cross the entire channel (blocking navigation) or if it will be placed just around the bridge pilings.

- The DEIS states that curtains would be used during "pile-driving operations in the channel." If curtains are chosen as the best method to contain suspended sediments, then they should be utilized during *all* construction activities, not just pile-driving operations, that have the potential to alter sediments. Additionally, it may be appropriate to utilize two separate barriers to contain sediments: a primary *and* a secondary barrier.

Sediment Resuspension Monitoring

In addition to silt curtains, another key consideration to minimize sediment resuspension involves the selection and operation of the dredge/construction equipment. The keys to an effective and environmentally safe dredging operation are (EPA 1994): 1) selection of compatible equipment with the conditions at the site and the constraints of the project, 2) use of highly skilled operators, and 3) close monitoring and management of the dredging operation.

Recommendation:

- Include a monitoring plan to measure the level of sediment resuspension caused by the project in the FEIS and the ROD. Include in the monitoring plan measurements of turbidity or suspended solids to help track contaminant transport and the efficacy of the barriers put into place. Specify that water samples be collected at one location upstream and several locations downstream from the construction activity.

Biological Resources – American Peregrine Falcons

As noted in Table 3.16-3 the Schuyler Heim Bridge is currently home to a year-round nesting pair of American peregrine falcons. It is also shown that Peregrine falcons have nested at the nearby Gerald Desmond Bridge. It appears that in some years, the two bridges were alternatively used as nesting territory.

In the evaluation of direct effects from construction (Section 3.16.3.3.1.1.1), the DEIS states that the removal and replacement of the Schuyler Heim Bridge would eliminate a known nest site for a breeding pair of peregrine falcons. The DEIS suggests that it is likely the disturbed

[3] US Environmental Protection Agency. 1994. ARCS Remediation Guidance Document. EPA 905-B94-003. Chicago, IL: Great Lakes National Program Office.

and displaced peregrines would utilize their alternative nesting location at the Gerald Desmond Bridge. To minimize impacts to the falcons from construction, Point B-7 (3.16.4.1.1.1) of the DEIS mentions that efforts will be made to coordinate construction schedules of the future Gerald Desmond Bridge Replacement Project to prevent overlap.

Recommendations:

- Prior to completing the FEIS, consult with the U.S. Fish and Wildlife Service and the California Department of Fish and Game regarding the displacement of the peregrine falcons within the Ports of Los Angeles and Long Beach.
- Include mitigation measures in the FEIS and ROD to ensure a long-term home for this species within the project area. The construction of the proposed project will result in the direct loss of habitat for a breeding pair of American peregrine falcons. It is unclear from the DEIS if replacement of this habitat has been considered other than to suggest that the pair might migrate over to their alternative nesting site at the Gerald Desmond Bridge. Potential migration to the Gerald Desmond Bridge may not address the long-term habitat requirements of the falcons since the Gerald Desmond Bridge is also undergoing replacement.